



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/445,827	08/01/2000	Masaaki Aoki	866/72191-2	1423

25269 7590 05/28/2003

DYKEMA GOSSETT PLLC
FRANKLIN SQUARE, THIRD FLOOR WEST
1300 I STREET, NW
WASHINGTON, DC 20005

EXAMINER

DONOVAN, LINCOLN D

ART UNIT	PAPER NUMBER
----------	--------------

2832

DATE MAILED: 05/28/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.
09/445,827

Applicant(s)
Aoki et al.

Examiner
Lincoln Donovan

Art Unit
2832



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on _____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some* c) ☐ None of:
- ☒ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 2
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

Art Unit: 2832

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: applicant must provide a section under "related cases" listing appropriate data regarding copending cases and PCTs.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 1, lines 8-9, applicant should clarify the specific structure intended by the "laminating blocks being laminated in the facing direction of the pole pieces." The specific intended orientation of the laminates is unclear.

Regarding claim 7, applicant should clarify the arrangement and structure of the silicon sheets fixed and supported by a non-magnetic lamina.

Regarding claim 10, there is no antecedent basis for "the ratio Sb/Sa."

Claim Rejections - 35 USC § 103

Art Unit: 2832

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over The prior art shown in figure 12a of Sakurai et al. [US 5,283,544] in view of Sakurai et al. The prior art shown in figure 1 of Sakurai et al. disclose a magnetic field generating device [figure 12a] having a pair of pole pieces [2] facing each other so as to form an air gap [4] and generating a magnetic field therein.

The prior art shown in figure 12a of Sakurai et al. disclose the instant claimed invention except for: the specific design of the pole pieces.

Sakurai et al. discloses a pole piece main component formed from a plurality of laminated blocks [13, figure 2] comprising silicon sheets [see abstract], a magnetic annular profusion [12] disposed on the side of the main component and wherein the silicon sheets in are laminated toward the outer face of the pole piece and divided into a plurality of sections in the circumferential direction [figure 1b].

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the pole piece design of Sakurai et al. in the prior art shown in figure 12a of Sakurai et al., for the purpose of reducing the formation of eddy currents and residual magnetism.

Art Unit: 2832

The particular thickness of the laminae would have been an obvious design consideration based on the desired field strength.

Regarding claim 4, Sakurai et al. discloses the silicon steel sheets being divided into a plurality of sections in the circumferential direction [figure 1b].

6. Claims 2-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over the prior art shown in figure 1 of Sakurai et al. in view of Sakurai et al. as applied to claim 1 above, and further in view of Laskaris et al. [US 5,874,880].

The prior art shown in figure 1 of Sakurai et al., as modified, disclose the instant claimed invention except for the laminated silicon sheets supported by a non-magnetic support member with high electrical resistance.

Laskaris et al. disclose a pole piece used in an MRI apparatus having laminated silicon sheets supported by a non-magnetic support member [48] with high electrical resistance.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the laminated silicon sheets of the prior art shown in figure 1 of Sakurai et al., as modified, be supported by a low-magnetic support member with high electrical resistance, as suggested by Laskaris et al., for the purpose of preventing undesired effects on the gradient magnetic field.

7. Claims 8-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over the prior art shown in figure 1 of Sakurai et al. in view of Sakurai et al. as applied to claim 1 above, and further in view of Miyamoto et al. [US 4,818,966].

Art Unit: 2832

The prior art shown in figure 1 of Sakurai et al., as modified, disclose the instant claimed invention except for: the protrusion being formed of laminated sheets, the particular ratios of material used and a permanent magnet support structure.

Miyamoto et al. discloses a magnetic field generating device [figure 6] having a pole member supported about laminated protrusions [60c] mounted on a permanent magnet structure [61].

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the mounting design of Miyamoto et al. for the prior art shown in figure 1 of Sakurai et al. in view of Sakurai et al., as suggested by Miyamoto et al., for the purpose of enhancing field uniformity and improving magnetic field intensity.

The particular ratio between the surface area and the sides of the protrusion would have been an obvious design consideration based on the specific material used for the field generator, desired field strength and specific application.

Conclusion

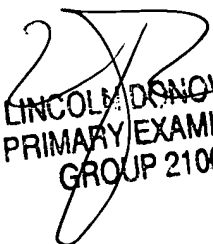
8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Lincoln Donovan whose telephone number is (703) 308-3111.

The fax number for this Group is (703)-872-9318.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-1782.

LDD

May 22, 2003


LINCOLN DONOVAN
PRIMARY EXAMINER
GROUP 2100